

What is claimed is:

1. A reversible ratchet-type wrench comprising:

a handle having a head extended from the handle and a web between said handle and the head; wherein the head has a hole in communication with a cavity in the web;

a compartment disposed in the web and having a first end in communication with the cavity and a second end in communication with an outside surface of the web; wherein a bridge is maintained in the web between the hole and said compartment;

a drive member rotatably mounted in the hole of the head, said drive member including a plurality of teeth formed on an outer periphery thereof;

a pawl mounted in the cavity and including a first side with a plurality of ratchet teeth and a second side with a recess;

a switch member including a turn-piece for manual operation and an actuating plate extended from the turn-piece and rotatably received in the second end of said compartment, wherein the actuating plate has a receptacle facing the recess in said pawl;

a biasing means engaged between the receptacle in said switch member and the recess in said pawl, said biasing means adapted to urge the ratchet teeth of said pawl into engagement with the teeth of said drive member; and

wherein said switch member has a first position where, upon counterclockwise rotation of said handle, said pawl engages said cavity and said drive member so as to prevent relative rotation between said drive member and said handle, and upon clockwise rotation of said handle, said pawl disengages said drive member and compresses said biasing means in a manner that urges said switching member to the first position.

2. The wrench of claim 1 wherein said switch member has a second position whereupon

clockwise rotation of said handle, said pawl engages said cavity and said drive member so as to prevent relative rotation between said drive member and said handle, and upon counterclockwise rotation of said handle, said pawl disengages said drive member and compresses said biasing means in a manner that urges said switching member to the second position.

3. The wrench of claim 1 wherein said biasing means creates a clockwise torque about the center of rotation of the switch member when said handle is rotated in the counterclockwise direction, while said switch member is in the first position.

4. The wrench of claim 2 wherein said biasing means creates a counterclockwise torque about the center of rotation of the switch member when said handle is rotated in the clockwise direction, while said switch member is in the second position.

5. The wrench of claim 1 wherein said biasing means comprises an elongate member and an elastic member.

6. The wrench of claim 5 wherein the elastic member is at least partially disposed within the elongate member.

7. The wrench of claim 5 wherein the elongate member has a first end adapted to engage the recess in said pawl and a second end adapted to engage the receptacle in said switch member, wherein said pawl is adapted to rotate about the first end of said elongate member.

8. The wrench of claim 1 wherein the second side of said pawl is curved and is adapted to engage a curved wall of said cavity.

9. A reversible ratcheting mechanism comprising:

a housing having an upper face and a lower face with a circular hole extending from the upper face through the lower face, a circular compartment extending from the upper face, and a cavity connecting the circular compartment to the circular hole; wherein the axis of the circular hole is parallel to the axis of the circular compartment;

a drive member rotatably mounted in the circular hole, said drive member including a plurality of teeth formed on an outer periphery thereof;

a pawl mounted in the cavity, said pawl including a first side with a plurality of ratchet teeth and a second side with a recess, wherein the recess has a first end and a second end;

a switch member including a turn-piece for manual operation and an actuating plate extended from the turn-piece and rotatably received in the compartment, wherein the actuating plate has a receptacle facing the recess in said pawl;

a biasing means having an elongate member, with a first end extending into the cavity and engaging the recess of said pawl and a second end disposed within the receptacle of said switch member, and an elastic member adapted to urge the elongate member into the recess of said pawl such that the ratchet teeth of said pawl engage the teeth of said drive member;

said switch member being rotatably switchable between a first position and a second position; wherein the first position has a clockwise ratcheting direction and a counterclockwise free rotation direction and the second position has a counterclockwise ratcheting direction and a clockwise free rotation direction; and

wherein counterclockwise free rotation biases said switch member to the first position and clockwise free rotation biases said switch member to the second position.

10. The mechanism of claim 9 wherein said switch member has a second position whereupon clockwise rotation of said handle, said pawl engages said cavity and said drive member so as to prevent relative rotation between said drive member and said handle, and upon counterclockwise rotation of said handle, said pawl disengages said drive member and compresses said biasing means in a manner that urges said switching member to the second position.

11. The mechanism of claim 9 wherein said biasing means creates a clockwise torque about the center of rotation of the switch member when said handle is rotated in the counterclockwise direction, while said switch member is in the first position.

12. The mechanism of claim 10 wherein said biasing means creates a counterclockwise torque about the center of rotation of the switch member when said handle is rotated in the clockwise direction, while said switch member is in the second position.

13. The mechanism of claim 9 wherein said biasing means comprises an elongate member and an elastic member.

14. The mechanism of claim 13 wherein the elastic member is at least partially disposed within the elongate member.

15. The mechanism of claim 13 wherein the elongate member has a first end adapted to engage the recess in said pawl and a second end adapted to engage the receptacle in said switch member, wherein said pawl is adapted to rotate about the first end of said elongate member.

16. The mechanism of claim 9 wherein the second side of said pawl is curved and is adapted to engage a curved wall of said cavity.